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Contracts

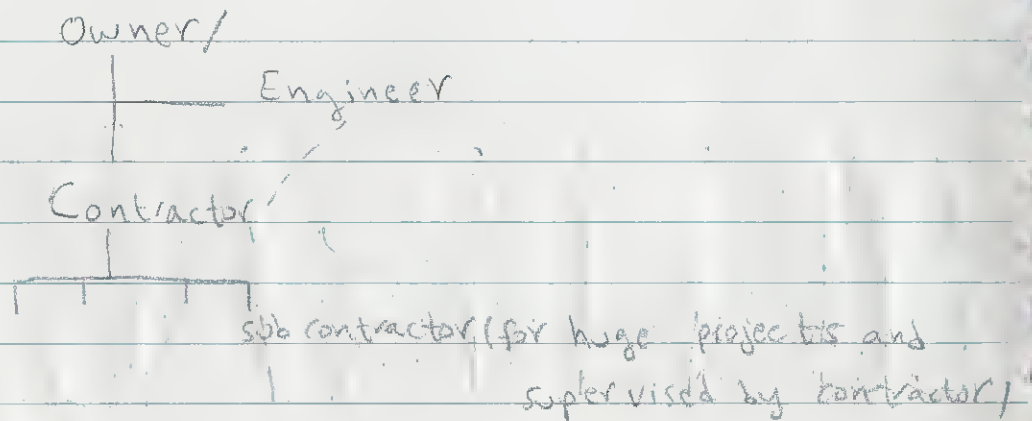
* Constituents of contract:

Contract = offer + acceptance + considerations (money, service or goods)

→ restrictions

Loral or written

* Contract trios:



* Basic requirements of a contract:

- 1- The services/deliverables
- 2- Payment amount [how often? monthly, quarterly, annually, etc.]
- 3- Time scale for completion
- 4- Changes/ variations/ Additions/ Deletion
- 5- Contract problems

- Services/deliverables → Should be clearly defined & agreed on both parties

- Payment → Manner & frequency of payment should be clearly expressed in contract as interest on overdue payment and suspension for late payment → $\text{توقيف العمل في حال التأخر في الدفع}$

- Timeline may not be a date, but it may be a duration
For a worker: If he works for a while → Owner is Contractor & vice versa



Start
End

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Changes/Variations → Added on the principle
 → 100% → 125% is allowed

Types of contracts according to variation → Variation is allowed (Variation $\leq 25\%$)
 with a claim till this
 → Variation is prohibited

Contract problems:

- Technical, financial, constructional, sudden as wars, hazards, non-executing, etc.
- "If something can go wrong, it will go wrong" Murphy's Law
 so hazards should be prevented by good management in contract
- Inflation for the long-time projects is most common problem
- Arbitration is quicker than normal judging
- Entrepreneurs are grades (according to efficiency) → Each project needs certain grade

* Types of contracts:

- 1- Fixed price: Fixed costs are given one part and needs competition
- 2- Cost plus (Reimbursable): wages each development (كل شيء له كلفة)

Factors for types of contracts:

- 1- Complexity of design & type of equipment (↑ → Cost plus as it is rare)
- 2- Amount of risk (new area → Cost plus → First time)
- 3- Period of Contract (Redetermined Cost plus is used due to rate changes, overhead variations, etc.)
- 4- Competition (fixed price is preferred by customer)
- 5- Urgency of requirement (↑ → Cost plus as no time to choose)
- 6- Difficulty of estimation of costs (↑ → Cost plus)
- 7- Performance of contractor (↑ → Fixed price as estimation is easy)



تكاليف إضافية جارية
 → إيقاف الإنتاج الجزئي الذي يحد منه والتالي
 الإنتاج على التدرج
 → إيقاف الإنتاج

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Bottom line of contract → Competitor
 Satisfaction isn't preferred

1- Fixed price:

- Contractor delivers items as specified & as in schedule for a specified price
- Greatest risk/opportunity to make profit to contractor
- Design may be not full

o Types of fixed price contract:

A- Lump sum fixed price contract:

- Simplest type
- For well known projects without complexity
- Changes are minimal
- Detailed drawings & specs are needed before start
- Pricing variation mechanism → Schedule of rates ^{التزام}

o Advantages:

- 1- Avoid disproportionate amount due to presence of detailed enquiries
- 2- Variation is minimal → Easy to administer
- 3- Evaluation is straightforward (w.r.t. specs)
- 4- Suitable for client as it gives early & firm commitment

o Disadvantages:

- 1- Contractor carries all risks over work, inflation, etc.
- 2- All possible savings increase contractor's profit
- 3- Savings may be on quality
- 4- Not suitable for many variations

o Usage:



- Obvious project (low uncertainty & controlled risks)
- For easily defined work scope
- Completed information at client

B - Bill of approximate quantities

- Work done is ascertain & evaluated by re-measurement → Payment on it
- Bill of quantities must state approximate quantities & realistic
- Accuracy is limited by available design info. and available time
- It may be for non-complete designs

Advantages:

- 1- Permits overlapping between design ^{التصميم} & construction
- 2- Saves time over firm B.O.Q. & cheaper
- 3- Covers wide range of non-specified items

Disadvantages:

- 1- It depends mainly on quantity surveyors for re-measurement
- 2- Doesn't assist in cost control
- 3- Gives air of satisfaction to design team

Usage: For construction contracts

C - Schedule of rates:

- List of measured items with units of measurement stated against each (by councils) but without quantities as basis of pricing
- For great uncertainty or hurry work (no re-measuring time)
- Requires considerable effort by quantity surveyors for total re-measurement
- For maintenance especially
- Very near to cost plus

Advantages:

- Permits overlap between design & construction
- Quick to prepare & cheap to produce
- Covers wide ranges of non-stated items in design
- For term contracts as maintenance

Disadvantages:

- Difficult to assess weighting across disciplines
- Can produce higher rates than B.O.Q.s due to uncertainty
- Cost control is difficult

Usage: Alternative to cost plus & small construction contracts

2- Cost plus:

The contractor is paid what he spends plus allowance for overheads & profit i.e. his fees

- Cost plus percentage fee
- Cost plus fixed fee
- Cost plus fluctuating fee

* Fixed-price incentive contract: (FPI)

- Not for significant amount of R&D
- Not for major cost element is for material
- Not for special purposes
- For long time projects and large quantities
- It rewards or penalize contractors according to their ability to control cost as in manufacturing & general administration

Item	Agreed value
Target Cost	100 000
Target profit	10 % \Rightarrow 10 000
Ceiling Cost	125 % \Rightarrow 125 000
Cost sharing (Above target cost)	80-20 \Leftarrow Add = 100
Cost sharing (Below target cost)	90-10 \Leftarrow Add = 100

تجاوز نفقات دون عتبة
Assume overrun of 20%



Serial	Item	Value	total
1	Target cost	100 000	
2	Plus 80% of 20000 (Portion of overrun assumed by customer)	$20,000 \times 0.8$ 16 000	
3	Total reimbursement cost		116 000 < 125 000
4	Target profit	10 000	
5	less 20% of 20 000 (Portion of overrun assumed by contractor)	$20,000 \times 0.2$ 4 000	
6	Total profit		6 000 (10 000 - 4 000)
7	Total reimbursement		122 000
8	Percent profit	$\frac{6000}{16000}$	5 %

يوزن على العميل ← السعر المتفق عليه + التغير الجزيء (5%)
المرموق

← يزيد على التكلفة بنسبة 5% على أساس التكلفة A.

← يضاف إلى باع العميل

العميل ← المقادير

Contractor completed with 80 000 cost

Serial	Value	Total
1	Target cost	100 000
2	less 90% of 20000 (Portion of customer saving)	$20,000 \times 0.9$ 18 000
3	Total reimbursement cost	82 000
4	Target profit	10 000
	Plus 10% of 20000	$20,000 \times 0.1$ 2 000
	Total profit	12 000
	Total reimbursement	94 000
	Percent profit	$\frac{12000}{82000}$ 15 %

يوزن على العميل 9% و 1% على المقادير



Contingency → As safety factor